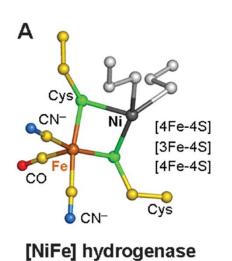
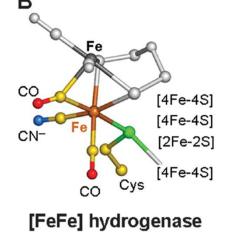
Outline

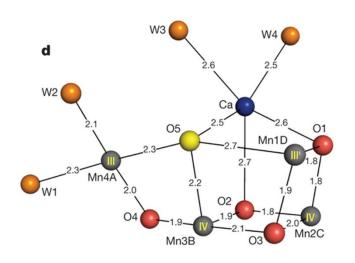
- Time-Resolved
 - Stopped-flow
 - Pump-probe
- Microscopy
- Crystallography
 - Anomalous diffraction
 - Time-dependence of diffraction peaks
- Other nuclei
 - 61Ni

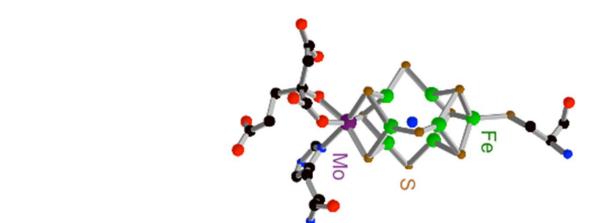
$$2H^+ + 2e^- \longrightarrow H_2$$

$$2H_2O \longrightarrow O_2 + 4H^+ + 4e^-$$

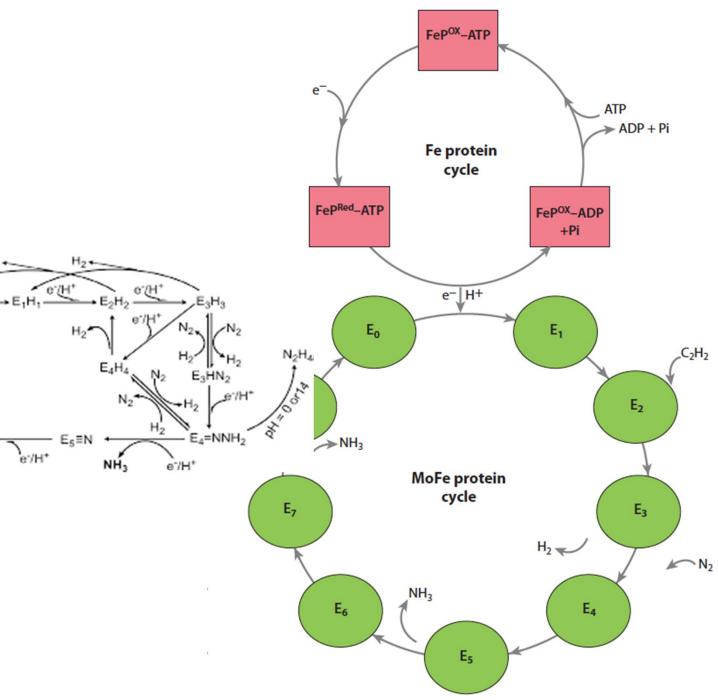








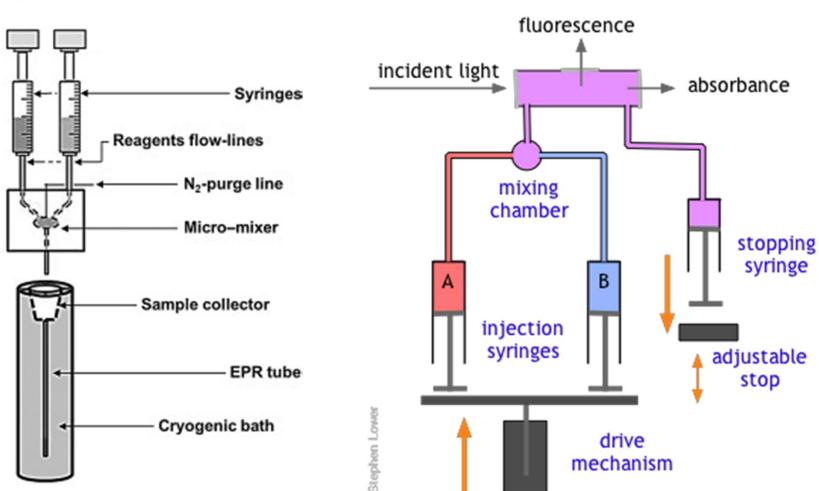
$$N_2 + 8e^- + 8H^+ \longrightarrow 2NH_3 + H_2$$



T.

Freeze quench → Stopped-flow

В



Pump-probe

$$N_2 + 8H^+ + 8e^- + 16ATP \rightarrow 2NH_3 + H_2 + 16ADP/P_i$$

ADP + Pi

ADP + Pi

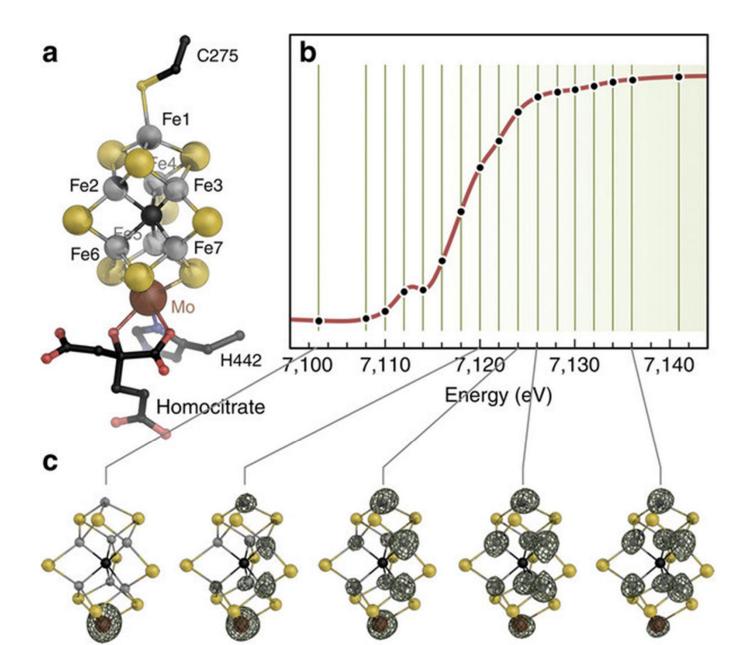
 $N_2 + 8H^+ + 8e^- + nhv \rightarrow 2NH_3 + H_2$
 $N_2 + 8H^+ + 8e^- + nhv \rightarrow 2NH_3 + H_2$

MoFe Protein

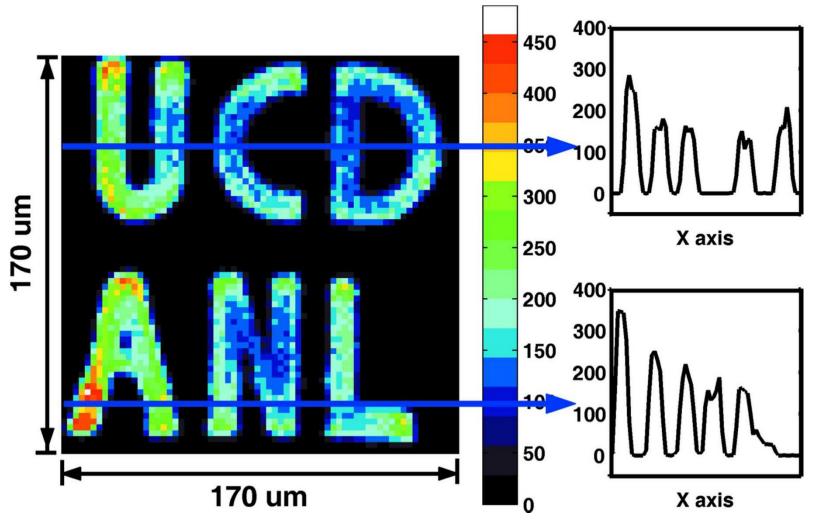
CdS nanorod

 $N_2 + 8H^+ + 8e^- + nhv \rightarrow 2NH_3 + H_2$
 $N_2 + 8H^+ + 8H^+ + 2NH_3 + H_2$
 $N_3 + 8H^+ + 8H^+ + 8H^+ + 2NH_3 + H_3$
 $N_4 + 8H^+ +$

Crystallography



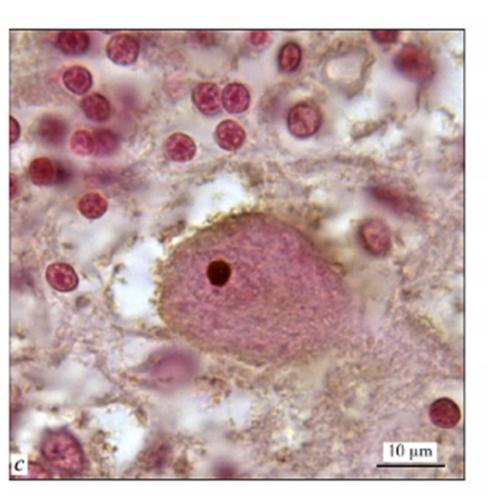
Microscopy

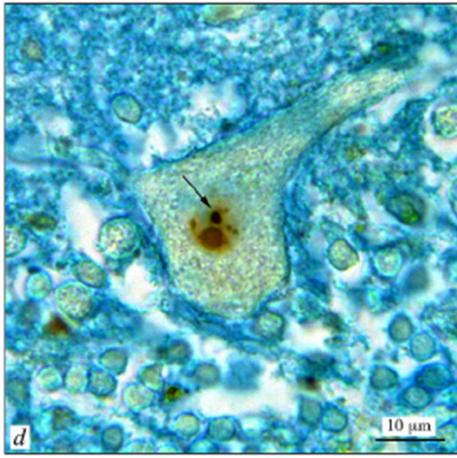




Intranuclear Distribution of Iron in Purkinje Cells in the Human Cerebellum

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⁶¹Ni – 67 keV

